



A Pioneer of Indigenous Vaccine Production in The Ottoman Empire: Colonel Dr. Hüseyin Remzi Bey (1839-1896)

Yerli Aşı Üretiminde Öncü Bir Osmanlı Hekimi: Miralay Doktor Hüseyin Remzi Bey (1839-1896)

Elif Gültekin¹([iD](#)), Ateş Kara^{2,3}([iD](#))

¹ Department of History of Medicine and Medical Ethics, Istanbul Medeniyet University Faculty of Medicine, İstanbul, Türkiye

² Division of Pediatric Infectious Diseases, Department of Pediatrics, Hacettepe University Faculty of Medicine, Ankara, Türkiye

³ Health Institutes of Türkiye, Türkiye Vaccine Institute, Aziz Sancar Research Center, Ankara, Türkiye

Cite this article as: Gültekin E, Kara A. Prof. Dr. A pioneer of indigenous vaccine production in the Ottoman Empire: Colonel Dr. Hüseyin Remzi Bey (1839-1896) J Pediatr Inf 2025;19(4):e304-e311.

Mr. Hüseyin Remzi was born on March 27, 1839 (H. 10 Muharrem 1255) on Fırın Street in the Kulaksız neighborhood of the Kasımpaşa district of İstanbul. His family originally came from the Cide district of Kastamonu. His grandfather, Mr. Yurdumoğlu Emir Ali, earned his living as a farmer and migrated to İstanbul with his family. His father, Mr. Emir Mustafa, worked as a carpenter at the Imperial Dockyard (1-3).

Mr. Hüseyin Remzi began his primary education in 1845 at the neighborhood school¹ and continued his secondary education at the Rüştiye² (Ottoman Junior High School) from

1851 onwards. In 1854, he was accepted into the Mekteb-i Tıbbiye-i Şahane (Imperial Medical School), which at that time was located in the Humbarahane Barracks³ and provided education together with the engineering school. Due to his father's early death, Mr. Hüseyin Remzi continued his education in financial difficulties. He first enrolled in the four-year preparatory section of the medical school⁴ without a scholarship, but after passing the exam, he earned the right to receive a monthly scholarship of 20 kuruş⁵ (cents) and clothing assistance (1-3).

¹ Neighborhood schools, which operated in Muslim neighborhoods in cities and villages during the Ottoman Empire, were basic educational institutions at the kindergarten and elementary school level, offering a beginner-level curriculum where boys and girls studied together or sometimes in separate schools. A document dated 1811 lists a total of 119 neighborhood schools within the Galata district (Beyoğlu, Tophane, Beşiktaş, and the Rumeli side of the Bosphorus), including 79 for boys and 40 for girls. See <https://turkmaarifansiklopedisi.org.tr/mahalle-mektebi>

² These were institutions providing secondary education in the Ottoman Empire. They were opened by Sultan Mahmud II to meet the personnel needs of the newly formed bureaucracy. In 1847, five rüştiye schools were initially opened in Davutpaşa, Beyazıt, Üsküdar, Tophane, and Bâbüâli, in the vicinity of Ağa Mosque. Their numbers subsequently increased. See <https://turkmaarifansiklopedisi.org.tr/rustiyeler>. Although earlier sources indicate that Mr. Hüseyin Remzi attended the Kasımpaşa Rüştiye, this information appears to be incorrect as the school in question was opened during the reign of Abdülhamid II. See <https://turkmaarifansiklopedisi.org.tr/askeri-rustiyeler>.

³ Today, it is the Haliç campus of Fatih Sultan Mehmet Foundation University.

⁴ At that time, education at the Medical School was designed to combine high school and higher education. The secondary school part is similar to today's high school education.

⁵ 1 mecdiye was equivalent to 100 cents and approximately 1 cents gold coin today, and 20 cents, which was one-fifth of that, is also equivalent to approximately one-fifth of a full gold coin today. It is possible to assess that the purchasing power of this amount was greater than today's. See <https://islamansiklopedisi.org.tr/mecdiye>

Correspondence Address / Yazışma Adresi

Elif Gültekin

Department of History of Medicine and Medical Ethics,
Istanbul Medeniyet University Faculty of Medicine,
İstanbul, Türkiye

E-mail: elif.gultekin@medeniyet.edu.tr

Received: 10.11.2025 Accepted: 26.11.2025

Available Online Date: 25.12.2025

This work is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

©Copyright 2025 by Pediatric Infectious Diseases and Immunization Society. Available online at www.cocukenfeksiyon.org

Mr. Hüseyin Remzi, who argued that Turkish should replace French, the language of instruction at the time, during his medical education, attracted attention with his pioneering initiatives in this field. While attending the medical school, he and his friends, such as Aziz İdris from Crimea, Hüseyin Halim, Servet Arif, Mehmed Nedim, Bekir Sıtkı, İbrahim Lütfi, and Vahid İbrahim, along with other students of the period, applied to Cemalettin Efendi, the Director of the Medical School⁶, citing the inability to train a sufficient number of Ottoman physicians as the reason why Turkish should be preferred in medical education. Taking the students' suggestion into consideration, Cemalettin Efendi established an elite class called the "mümtaz class" (elite class) in 1857 (H. 1269) with the aim of training a cadre proficient in Arabic, French, and Turkish⁷. In this class, where Hüseyin Remzi Bey and his friends, who were fighting for Turkish medical education, continued their studies, Ahmet Lütfi Efendi, proofreader at Takvimhâne-i Âmire⁷, was appointed as a teacher, while Arif Efendi and Şevki Efendi were appointed as debaters (3).

However, in 1859, with the resignation of Cemalettin Efendi and the appointment of Hayrullah Efendi in his place, the elite class was closed. Nevertheless, the students of the elite class continued their work, establishing an unofficial society called Cemiyet-i İlmiye-i Tibbiye (Medical Science Society) in 1862 under the patronage of Major Mr. Ahmet Ali, Assistant Instructor at the Internal Medicine Clinic. They carried out their activities at the home of Hacı Arif Efendi, a former debater and director of the Medical School Printing House at that time, located in the Hacı Beşir Ağa Madrasa in Eyüp. After Salih Efendi was appointed Minister of Medical Affairs in 1865, efforts were made to formalize the society's activities, and with the approval of Sultan Abdülaziz, the society took the name "Cemiyet-i Tibbiye-i Osmaniye" (Ottoman Medical Society) (4,5).

The society's efforts bore fruit, and the Ottoman Empire's first civilian medical school, Mekteb-i Tibbiye-i Mülkiye, which designated Turkish as its language of instruction, began teaching in 1866. By 1870, classes at the military medical school were also being taught in Turkish. Young physicians who were members of the Ottoman Medical Society and Hüseyin Remzi played important roles in the process of institutionalizing

Turkish medical education. They translated textbooks to be used in civilian medical schools and conducted extensive dictionary work to Turkishify medical terminology. These activities represented an important step towards the nationalization of modern medical education (3). Mr. Hüseyin Remzi, who graduated from the medical school in 1865 with the rank of lieutenant⁸, began his career as a military doctor in the 3rd Army in Manastır; after two years of service there, he served as a naval doctor for five years (3). In 1873, he was promoted to the rank of major and became an assistant teacher at the Imperial Medical School. Here, he taught the courses of Medical Curriculum (Pharmacology) and the Science of the Three Elements (Plants, Animals, and Minerals). During various periods, he also taught Menafü'l-Aza (Physiology), Hifzu's-Sihha (Public Health), İlm-i Hayvanat (Zoology), and İlm-i Mevâlid-i Selâse (Science of the Three Element). He also taught Ethics. In 1876, the newly opened Military Health course at the Mekteb-i Fünun-ı Harbiye-i Şahane (Imperial Military Academy) was added to these courses. He also taught Mevâlid-i Selâse courses at Darüşşafaka (Ottoman Secondary School for Orphans) without pay and served as the institution's volunteer physician. He published books for teaching the Mevâlid-i Selâse courses and pioneered the establishment of the History of Natural Sciences Museum at this school⁹ (Figure 1). In 1877, he was appointed to the teaching staff and continued to teach his courses (6).

Major Hüseyin Remzi Bey volunteered to assist doctors in Rumelia when schools closed due to the war during the 1876-77 Ottoman-Serbian War (The Balkan Front of the 93 War), joining the Niş Brigade with his final-year students. After serving here for six months, he returned to Istanbul and took on the honorary chief physician position at the refugee hospital opened for the sick and needy among the people forced to migrate due to the 93 War¹⁰. He was promoted to the rank of kaymakam (lieutenant colonel) in 1878 for his services during the 93 War. Hüseyin Remzi Bey returned to his position as a military doctor for a period due to the war, but with the end of the war, he resumed his teaching duties at various schools. From 1878 to 1886, he also taught zoology and practical farming at the Mekteb-i Mülkiye-i Şahane (3).

⁶ In 1850, with the abolition of the institution of chief physician, the Nezaret-i Mekteb-i Tibbiye was established in its place, and the Mektebi Tibbiye Nazırı began to manage the Medical School. This position is similar to today's dean position.

⁷ When it became apparent that the Mühendishâne Printing House and the Tabhane-i Amire in Üsküdar, which were the active printing houses of the period, could not meet the demand for printing the official gazette of the period, Takvim-i Vekâyi⁸, which began publication during the reign of Mahmud II, a new printing house was established. To this end, a new administration was established under the name Takvimhâne/Takvîm-i Vekâyi'hâne-i Âmire/Takvîm-i Vekâyi'hâne Nezâreti. The Takvimhâne began operating in 1831 under the supervision of Vak'anüvis Sahaflar Şeyhizâde Esad Efendi. A few months later, the old printing house under the control of Masârifat Nâzırı İbrâhîm Sâib Efendi, Tabhâne-i Âmire, was attached to the Takvimhâne-i Âmire Nezâreti. The proofreaders working at this institution also performed the duties of editors. See <https://islamansiklopedisi.org.tr/takvimhane>

⁸ A rank between Captain and Major

⁹ In Darüşşafaka's new building, which opened in 1873, a natural history collection was created to support courses related to the natural sciences. This collection has survived to the present day, albeit with some losses, and is preserved within Darüşşafaka. See Özge Hazar, "Evaluation of Darüşşafaka's Natural History Collection from a History of Science Perspective", Istanbul University Institute of Social Sciences Unpublished Master's Thesis, Istanbul, 2021.

¹⁰ Hospitals were opened in the places where migrants settled to address and resolve their health issues.



Figure 1. The Natural History Collection at Darüşşafaka's Natural History Classroom (Source: Darüşşafaka Museum Archive No. 664). Taken from Özge Hazar's thesis titled "Evaluation of Darüşşafaka's Natural History Collection from the Perspective of the History of Science".

Dr. Hüseyin Remzi Bey is a scientist who stands out not only for his work in military medicine and medical education, but also for his pioneering studies in public health and microbiology¹¹. In 1883, he was appointed to the position of vaccine inspector (inspektörlük), responsible for the distribution of smallpox vaccines imported from Europe and their delivery to regions outside İstanbul. Shortly thereafter, he undertook important duties related to the institutionalization of domestic vaccine production (7,8). In this context, Dr. Hüseyin Remzi Bey was sent to Paris on July 6, 1885, as part of a scientific delegation tasked with learning the methods of preparing and administering the rabies vaccine, which had been administered to humans for the first time, in accordance with

the will of Sultan Abdülhamit II, the ruler of the time, together with Dr. Zeoros Pasha and Mr. Hüseyin Hüsnü, a teacher at the Veterinary School (9,10) (Figure 2). The delegation arrived in Paris on June 8, 1886, and met with Louis Pasteur. During this meeting, they presented the First Class Medjidie Medal sent to him by Sultan Abdülhamid II¹², and a financial aid of 10.000 francs (11,12).

The delegation members received six months of training in Paris, during which they acquired knowledge and skills regarding the preparation of the rabies vaccine in a laboratory setting and its administration to humans. Mr. Hüseyin Remzi, however, did not limit himself to the rabies vaccine during this period; he deepened his knowledge of bacteriology by

¹¹ In previous studies, the date of Hüseyin Remzi's appointment as vaccine inspector has been stated differently without citing sources. See Unat, "Bacteriology and Virology", pp. 17-24; Unat, "Medical Zoology and Parasitology", p. 21; Nuran Yıldırım, "Preventive Health Practices in Turkey from the Tanzimat to the Republic," Encyclopedia of Turkey from the Tanzimat to the Republic", Vol. 5, İstanbul: İletişim Yayınları, 1985: 1320-1338; Süheyl Ünver, "Smallpox Vaccination and Its History" in Turkey, İstanbul: İsmail Akgün Printing House, 1958: 150-51.

¹² The Mecidi Medal was a medal of valor awarded between 1852 and 1922. Designed during the reign of Sultan Abdülmecid, the Mecidi Medal had five ranks and was awarded to members of the scholarly and military communities who demonstrated outstanding service and success. Fifty medals of the first rank, 150 of the second rank, 800 of the third rank, 3.000 of the fourth rank, and 6.000 of the fifth rank were minted. Only the first rank is decorated with precious stones. The first rank, which is hung on a cord, and the second and third ranks, which are hung around the neck, are almost the same size. The fourth rank is smaller, and the fifth rank is the smallest. The fifth rank is silver, while the others are gold. See <https://islamansiklopedisi.org.tr/nisan--madalya>



Figure 2. The team that went to France in June 1886 to receive training from Pasteur on rabies vaccination applications (top row, front, from left to right): Veterinarian Hüseyin Hüsnü, Professor Zoeros Paşa, and Dr. Hüseyin Remzi.

attending special classes at the laboratories of the Jardin des Plantes, Paris's famous botanical garden (13,14). Mr. Hüseyin Remzi, who attracted attention with his diligence and established good relationships during his time in Paris, was elected a member of "La Société Asiatique" (Asian Society)¹³ on December 10, 1886 which was interested in ancient Eastern cultures (3).

After his research period in Paris, Mr. Hüseyin Remzi returned to his homeland and played an active role in the establishment of the Daülkelb Müessesesi ve Bakteriyolojihane (Rabies Institute and Bacteriology Laboratory), which was founded to produce rabies vaccines and conduct bacteriological research. This institution successfully administered the first rabies vaccine produced domestically in the Ottoman Empire on June 3, 1887 (15). This development led to a significant decrease in rabies-related deaths; over time, the establishment of Daülkelb operating rooms in different regions of the Ottoman Empire ensured the widespread provision of this service.

Mr. Hüseyin Remzi did not only apply the knowledge and experience he gained in Paris, but also shared it with Ottoman scientific circles through his written works (16). In this context, the work titled "Mikrob" (Microbe in English), which he translated from French together with Mr. Hüseyin Hüsnü and published in 1887, is considered the first work in the field of microbiology in Ottoman medical literature and is regarded as an important turning point in the introduction of the discipline to the Ottoman scientific environment (17). On the other hand, Dr. Hüseyin Remzi's work, *Tarih-i Tib* (History of Medicine), written in the same year and based on his translation of Pierre Victor Renouard's 1846 work "Histoire de la médecine depuis son origine jusqu'au XIXe siècle" (History of Medicine from its Origins to the 19th Century), reveals that he deepened his knowledge in Paris not only in the field of microbiology but also in the field of medical history. This translation is considered the first comprehensive book on the history of medicine written in Ottoman Turkish and contributes to the institutionalization process of modern medical historiography in the Ottoman intellectual world (3).

Promoted to the rank of miralay (colonel) on September 29, 1887 (H. 10 Muharrem 1305), Dr. Hüseyin Remzi played a central role in the same year in the formation of the Ottoman Empire's public health policies. the Medical Council for Civil and General Health, which operated under the Ministry of the Interior; and the Civil Medical Society, which worked on preparing health-related legislation and regulations concerning municipal physicians and health officials (27). Along with these, he also served on the commission formed to carry out the work of establishing the *Mekteb-i Baytariye-i Mülkiye* (Civil Veterinary School). With the official opening of the school in 1889, Dr. Hüseyin Remzi became the first professor of zoology at the institution (18). Due to his expertise and experience in the field of bacteriology, Dr. Hüseyin Remzi was sent to Aleppo in October 1890 to investigate the cholera epidemic on site and develop scientific solutions to the situation (6).

One of Dr. Hüseyin Remzi's most important contributions in the field of microbiology was his initiative to establish a state-supported vaccine production center (Telkihâne) in the Ottoman territories. While serving as vaccine inspector, he proposed the establishment of a vaccine production center, as was the case in other countries, in order to supply vaccines to regions in need throughout the empire. In this regard, he submitted three separate reports on January 18, 1891, January 24, 1891, and April 8, 1892 (8,19,20). In these reports, he scientifically demonstrated that Europe, understanding the disadvantages of human-to-human vaccination, had switched to the production of smallpox vaccine from cows. Hüseyin Remzi Bey stated that the first facility producing vaccines using new methods in Paris was established in 1866 by Dr. Ernest Cham-

¹³ La Société Asiatique: The French Oriental Society. It was founded in 1822. See <https://islamansiklopedisi.org.tr/journal-asiatique>

bon as a private facility. He emphasized that in 1889, a vaccine house was opened within the Paris Faculty of Medicine, and production was taken over by an official institution, with the prepared vaccine pens being delivered to the places where they were needed (8,20).

Dr. Hüseyin Remzi Bey stated that during his tenure as vaccine inspector, they procured vaccines from various institutions in Europe, including Chambon's vaccine center; however, he emphasized that the vaccine to be produced domestically would be superior in many ways, primarily in terms of freshness and accessibility. After stating that vaccines produced at the vaccine center could be placed in glass tubes and quickly and effectively sent to regions of the country in need, he expressed that delaying such an institution could lead to irreparable consequences in terms of public health. Although there were special facilities in the Ottoman Empire, such as the smallpox vaccine production center called "Etablissement Vacciogéne" or "Institute Vacciogéne" in Beyoğlu in 1880, Hüseyin Remzi Bey argued that vaccine production should be carried out by the state, as was the case in other countries (8,20).

To give concrete form to his proposal, Hüseyin Remzi Bey suggested that the Telkikhâne be built on a suitable site in the Botanical Garden of the Mekteb-i Tibbiye-i Şahane (Imperial Medical School) and submitted a notebook containing the

construction costs and layout plan, along with a sketch of the site, to the Tibbiye Nezâreti (Medical Directorate). He also suggested that vaccine production could begin temporarily in a suitable corner of the Tufeylât-ı Hayvâniye Ameliyâthânesi (Parasitology laboratory) until construction was completed (8,20). Hüseyin Remzi's proposal was accepted after discussions in the relevant units, and vaccine production began in July 1892 in a section of the Animal Parasites Laboratory (20,22-24) (Figure 3). In 1894, Telkikhâne moved to a new building constructed in the Botanical Garden of the Medical School, thus acquiring its own structure. Dr. Hüseyin Remzi, who was appointed director of the Vaccination Center from its inception, continued in this position without interruption until his death; he was involved not only in vaccine production but also in the training of vaccine administrators (Vaccinators). Following his death, the directorship of the institution was successively held by Dr. Hasan Zühtü Nazif, Dr. Rıfat Hüsamet-tin, and Dr. Kemal Muhtar (25).

Mr. Hüseyin Remzi fell ill at the Nakşibendî Turâbî Tekke in Kasımpaşa, where he was staying at the invitation of his relative Şeyh Behçet Efendi. After two weeks of illness, he passed away on December 18, 1896 (H. 13 Receb 1314).¹⁴ His grave is located in the cemetery of the Turâbî Dergâh, opposite the Kasımpaşa Naval Directorate (29) (Figure 4,5).



Figure 3. Mr. Hüseyin Remzi (center) and Telkikhane-i Şâhâne officials, at the head of a calf to obtain a smallpox vaccine (1892, Servet-i Fünûn).

¹⁴ Upon his death, Saadet (no. 3824), İkdâm (no. 871), Hanımlara Mahsus Gazete (no. 92), Children's Newspaper (no. 32), Servet-i Fünun (no. 302), and Revue Medico-Pharmaceutique (no. 12) published articles about his death and life.



Figure 4. Hüseyin Remzi Bey, Servet-i Fünun, issue 302, December 18, 1896.

Known for his pious and charitable personality, Dr. Hüseyin Remzi Bey was referred to by the people as “Evliya Hoca” or “Evliya Hüseyin Bey” (2). He served his country loyally until his last

breath and lived his life as a physician and intellectual devoted to national values. Even during his student years, he pioneered the process of nationalizing Turkish medical education by demanding that the language of instruction at the Medical School be Turkish instead of French. As a result of this struggle, Turkish medical education was initiated at the civilian medical school and eventually transitioned to Turkish education at the military medical school as well. The Ottoman Medical Society, of which Mr. Hüseyin Remzi was a founding member, carried out important work on the Turkishification of medical terminology. Based on Nysten’s “Dictionnaire de Médecine”, the Society published Lügat-ı Tıbbiye, the first Turkish medical dictionary, in 1873 and translated many medical works into Turkish (5).

Dr. Hüseyin Remzi, who taught almost every branch of microbiology in medical schools, was described by Ekrem Kadri Unat as our country’s first microbiologist. Hüseyin Remzi, who left behind an extensive collection of works in the fields of microbiology and public health, had 11 of his 44 published books directly related to these fields (25). Mr. Hüseyin Remzi, who was also an important actor in the institutionalization process of microbiology in the Ottoman geography, was one of the pioneers in establishing the Daülkelb Institution and the Bacteriology Laboratory, as well as the Telkihane, a vaccine production center. His efforts in the local production of vaccines clearly demonstrate his patriotism and his ideal of serving his nation.



Figure 5. Turâbi Dergâhı.

Hüseyin Remzi Bey, who closely followed current developments in medicine, also had a special interest in the history of medicine; he wrote works in this field and gave various lectures. It is understood that Hüseyin Remzi Bey was aware that medicine developed within a historical continuum, and in this respect, he is considered one of the pioneers of medical historiography in Türkiye. Indeed, it is known that he encouraged Rıza Tahsin, author of *Mirat-ı Mekteb-i Tıbbiye* (History of the Medical School), one of the first works on the history of medicine in our country, to write this work (26). Furthermore, aware that medicine is not only a technical discipline but also an ethical field of endeavor, he both taught ethics courses and wrote works on this subject (3).

Dr. Hüseyin Remzi left behind numerous works.¹⁵ These works range from textbooks on zoology, medical zoology, and parasitology prepared for higher education to natural science books for secondary education; from books on microbiology and public health to works on marriage, childbirth, and veterinary medicine. to texts on the history of medicine and the fields of Islam and ethics. His works have had a lasting impact not only in the field of medicine but also in terms of the socialization of scientific knowledge and the spread of education. A list of his works, as far as it could be determined, is provided in the appendix (Appendix 1).

References

1. Gencer RT. Merhum Muallim Dr. Hüseyin Remzi. *Poliklinik* 1940;41:227-9.
2. Ünver S. *Tıbbiyemizin Pek Çalışkan ve Haluk Hocalarından Miralay Dr. Evliya Hüseyin Remzi Bey (1839-1896)*. 14 Mart 1943 Tıp Bayramı Broşüründen Ayrı Baskı.
3. Unat EK. Muallim Miralay Dr. Hüseyin Remzi Bey ve Türkçe Tıp Dilimiz. *Tıp Tarihi Araştırmaları* 1996;6:155-63.
4. Unat EK. Osmanlı Devleti'nde Tıp Cemiyetleri. Osmanlı İlmî ve Mesleki Cemiyetleri. Ekmeleddin İhsanoğlu (ed.), İstanbul: İÜ Edebiyat Fakültesi Basımevi, 1987:85-110.
5. Sarı N. Cemiyet-i Tıbbiye-i Osmaniye ve Tıp Dilinin Türkçeleştirilmesi. Osmanlı İlmî ve Mesleki Cemiyetleri. Ekmeleddin İhsanoğlu (ed.), İstanbul: İÜ Edebiyat Fakültesi Basımevi, 1987:121-42.
6. Unat EK. Osmanlı İmparatorluğu'nda Bakteriyoloji ve Viroloji. İstanbul: İst. Üni. Tıp Fak. Yay, 1970:17-22.
7. Karacaoğlu E. *Telkikhane-i Şahane'nin Kuruluş Sürecine Dair. Tarih Araştırmaları Dergisi* 2019;38(65):197-250.
8. Devlet Arşivleri Başkanlığı Osmanlı Arşivi, ŞD 2568/3.
9. Hüseyin Remzi. *Kuduz İleti ve Tedavisi*, İstanbul: Mekteb-i Tıbbiye-i Mülkiye Matbaası 1306.
10. Devlet Arşivleri Başkanlığı Osmanlı Arşivi, İ.ŞD 88/5264.
11. Devlet Arşivleri Başkanlığı Osmanlı Arşivi, Y.MTV 20/20.
12. Devlet Arşivleri Başkanlığı Osmanlı Arşivi, İ.DH 989/078144.
13. Yıldırım N. Zoeros Paşa'nın Paris Dönüşü Takdim Ettiği Rapor. *Yeni Tıp Tarihi Araştırmaları* 1995:1(1):91-7.
14. Devlet Arşivleri Başkanlığı Osmanlı Arşivi, Y.PRK.SGE 2/73.
15. Zoeros A. *Daulkelb Ameliyathanesi, Nevsal-i Afiyet. Besim Ömer (ed.)*, İstanbul, 1315:96-9.
16. Unat EK. Osmanlı İmparatorluğu'nda Tıp Zoolojisi ve Parazitoloji. İstanbul: İst. Üni. Tıp Fak. Yay 1970:18-28.
17. Karacaoğlu E. Hüseyin Remzi Bey ve Hüseyin Hüsnü Bey'in "Mikrob" Adlı Eseri ve Tıp Tarihimiz Açısından Önemi. *Türkiye Klinikleri J Med Ethics* 2014;22(2):48-59.
18. Karacaoğlu E. Doktor Hüseyin Remzi Bey (Ö. 1896): Hayatı, Eserleri ve Bilimsel Bir Diyalogu. *Mersin Üniversitesi Tıp Fakültesi Lokman Hekim Tıp Tarihi ve Folklorik Tıp Dergisi* 2015;5(2):69-83.
19. Hüseyin Remzi, *Telkîh-i Hayvânî Usûl-i Amelîsi*. İstanbul: Karabet Matbaası, 1308: 3-9.
20. Devlet Arşivleri Başkanlığı Osmanlı Arşivi, İ.MMS 131/5618.
21. Devlet Arşivleri Başkanlığı Osmanlı Arşivi, DH.MKT 1489/23.
22. Devlet Arşivleri Başkanlığı Osmanlı Arşivi, BEO 28/2047.
23. Devlet Arşivleri Başkanlığı Osmanlı Arşivi, DH.MKT 1975/80.
24. Devlet Arşivleri Başkanlığı Osmanlı Arşivi, ŞD 2587/17.
25. Unat EK. Osmanlı İmparatorluğunda Mikrobiyoloji Tarihi Üzerine Bir Deneme. *Mikrobiyoloji Bülteni* 1970;4(3):159-175.
26. Tahsin R. *Mirat-ı Mekteb-i Tıbbiyye Nasıl Yazdım*. *Poliklinik* 1940-41;7(35):101-104.
27. *Salnâme-i Devlet-i Aliyye-i Osmaniye*. İstanbul: 1305 (M. 1888):177-8.
28. Hazar Ö. *Darüşşafaka'nın Doğa Tarihi Koleksiyonunun Bilim Tarihi Açısından Değerlendirilmesi*. İstanbul Üniversitesi Sosyal Bilimler Enstitüsü Yayınlanmamış Yüksek Lisans Tezi, İstanbul, 2021.
29. Hüseyin Remzi. *Müntehabat-ı Hüseyin Remzi'den Vesile-i İntibah*. *Der-saadet*: 1318.

Appendix 1. Works

1. *Risale-i İhtisâr-ı Fevâid* (Available at the Atatürk Library).
2. *İlm-i Hayvanat* (Bouquillon Translation) (Available at the Atatürk Library).
3. *İlm-i Hayvânât: Mebâdî-i Tarih-i Tabî'yye-i Tıbbiyye Kısım-ı Evvel* (Richard) (Available at the Atatürk Library).
4. *Zoology: Principles of Medical Natural History, Part One* (Available at the Atatürk Library).
5. *The Science of the Three Elements: The Science of Animals* (Available at the Atatürk Library).
6. *The Science of the Three Elements: The Principles of Botany* (Available in the Seyfettin Özege Collection).
7. *The Science of Botany* (Available in the Seyfettin Özege Collection).
8. *Natural History: The Science of Botany* (Available at the Atatürk Library).
9. *Darüşşafaka Fifth Year's Mevâlid-i Selâseden Cüz'-i Evvel: Usûl-i İlm-i Hayvanat* (Available at the Atatürk Library).
10. *Darüşşafaka Fifth Year's Mevâlid-i Selâseden Cüz'-i Sâni: Usûl-i İlm-i Nebâtât* (Available at the Atatürk Library).

¹⁵ Hüseyin Remzi's work "Ahlâk-ı Hamîdî" lists a total of 40 books, while Hoca Hanım's work "Dürus-u Ahlâk for Girls" and 58 books in "Vesile-i İntibah from Müntehabat-ı Hüseyin Remzi". However, some of the works in these lists have errors in their names. Some works are listed more than once. It is understood that some of the works belong to Telgrafçı Hüseyin Remzi, who was his assistant teacher and took over his lessons after his death. The list, compiled based on a catalog search in libraries, is provided in the appendix. Books that could not be found in library catalogs have not been added to the list.

11. *Darüşşafaka Fifth Year's Mevâlid-i Selâseden Cüz'-i Sâlis: İlmü'l-Arzu ve'l-Meadin* (Available at the Atatürk Library).
12. *Lessons in Medical Zoology* (Available in the Seyfettin Özege Collection).
13. *Medical Zoology Part 1 General Conditions of Animals* (available at the Atatürk Library).
14. *Medical Zoology Part 2: Non-Fecund and Parasitic Animals* (available at the Atatürk Library).
15. *The Science of the Three Births*: (Available in the Seyfettin Özege Collection).
16. *Concise Natural History: Mineralogy Section* (available at the Atatürk Library).
17. *Concise Natural History: Botany Section* (Available at the Atatürk Library).
18. *A Brief Natural History: The Animal Kingdom* (Available at the Atatürk Library).
19. *Introduction to Natural History: The Three Births* (Available at the Atatürk Library).
20. *Zootehni: The Application of Animal Science to Farms* (Available at the Atatürk Library).
21. *Preservation of Youth Health* (Available at the Atatürk Library).
22. *Military Health Preservation Lessons* (Available at the Atatürk Library).
23. *Preservation of Military Health* (Available in the Seyfettin Özege Collection).
24. *Hifzu's-Sıhhat-i Müteehhilin* (Available at the Atatürk Library).
25. *Fundamentals of Health Preservation: Human Life and Well-being* (available at the Atatürk Library).
26. *History of Medicine* (available at the Atatürk Library).
27. *Microbes. Contagious Diseases and Anthrax: Means of Transmission and Methods of Vaccination* (Available at the Atatürk Library).
28. *Guide to the Inspection of Livestock* (Available in the Seyfettin Özege Collection).
29. *Diseases Associated with Goat Breeding* (Available in the Seyfettin Özege Collection).
30. *Mirâtü'l-Beyt: A Gift for Women* (Available at the Atatürk Library).
31. *Practical Methods of Animal Husbandry* (Available at the Atatürk Library).
32. *Rabies and Its Treatment* (Available in the Seyfettin Özege Collection).
33. *The Science of Childbirth* (Available in the Seyfettin Özege Collection).
34. *Medical Advances* (Available at the Atatürk Library).
35. *Prophetic Medicine* (Available at the Atatürk Library).
36. *Hamidi Ethics* (Available at the Atatürk Library).
37. *The Science of Ethics* (Available at the Atatürk Library).
38. *Practical and Theoretical Vaccination Course* (Available in the Seyfettin Özege Collection).
39. *Best Man: Guide to Marriage* (Available at the Atatürk Library).
40. *A Mouse's Journey* (available at the Atatürk Library).
41. *Selected Works of Hüseyin Remzi: A Means of Awakening* (Available at the Atatürk Library).
42. *Life, Death, and Love, Marriage* (Selected Works of Remzi) (Available at the Atatürk Library).
43. *Translation of Dürr-i Esdaf* (Available at the Atatürk Library).
44. *A Gift for Mothers* (Available at the Atatürk Library).
45. *Ahter-i Kebir* (Available at the Atatürk Library).
46. *Hoca Hanım: Lessons in Morality for Young Women* (Available at the Atatürk Library).
47. *Family Health Preservation: Remzi's Memorial* (Available at the Atatürk Library).